

## Tropical GRIP Forecast Discussion for September 22, 2010

Created 1600 UTC September 22, 2010

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### **Summary:**

Today is the final science flight for the DC-8. The only target on the horizon is PGI-46L/ AL95. The Global Hawk will pick up where the DC-8 left off, and fly tomorrow into a potentially developing tropical cyclone. The NHC has increase the probability of formation to 60%, and a broad circulation has become apparent in surface observations and dropsondes. Unfortunately, AL95 has remained very far south, and the forecast calls for it to remain that way. Landfall towards the end of the week as a depression or tropical storm seems likely along the Nicaraguan coast. After that, the forecast is somewhat unclear, and the remains may move northwestward, back into the Caribbean. While such a track is uncommon, it would allow for redevelopment, and eventual steering towards Cuba or Florida. Elsewhere, Lisa remains stationary, and has essentially not changed over the past several days, while PGI-47L has dissipated entirely. In the East Pacific, after becoming a minimal tropical storm, Georgette made landfall yesterday, and is again a TD. There is a very slight chance it could regain some strength over the Gulf of California, however the prospects are slim.

### **Forecast for 1600 UTC 9/22/2010:**

### **Synoptic Overview:**

The main features of note in the Atlantic today are PGI-46L/AL95, now off the NE coast of Venezuela, Lisa, which hasn't moved in days, and mid latitude cyclone Igor, now approaching Greenland (**S1**). The subtropical ridge has been decimated by Igor and ex-Julia, so steering flows over the eastern Atlantic are fairly weak. A high is building off of the US coast which will eventually reinforce the ridge, turning Julia to the east. This high is also responsible for the WNW flow steering AL95. Once that ridge moves farther east, it should allow AL95 to begin to turn northward to some extent.

In the upper levels, the main feature remains the strong trough that merged with Igor yesterday (**C1 and C3**). Small cold lows over the NE Caribbean and central Gulf of Mexico are also evident, while the central Atlantic is dominated by a ridge ahead of the trough. 850-200mb wind shear is very high ahead of the trough, however it is low through most of the remainder of the Atlantic (**C2**). Only small local maximums in wind shear are apparent with the Gulf of Mexico and NE Caribbean upper cold lows. At lower levels, 850mb vorticity appears slightly better organized and stronger today, while Lisa's vorticity signature is also somewhat stronger. The only other vorticity signatures are frontal or ITCZ in nature (**C4**).

Over Africa, an upper level trough remains just west of Europe (C5), and is responsible for very strong shear just north of Lisa (C8). There is an upper level ridge over NW Africa, resulting in primarily easterly winds at upper levels over the continent. Upper level easterlies are also prevalent over the Atlantic, south of the trough. 850mb vorticity shows the remains of PGI-47L, as well as the signature of the next wave, potentially PGI-48L (C6), and a wave axis is apparent in the CIMSS lower level winds analysis (C7).

### **Features of Interest:**

#### **PGI-46L...AL95:**

This morning, Invest 95L is located in a TAFB center fix near 13.5N/69.5W, with a T-number of 1.0. After yesterday's impressive and longitudinally broad convective burst, the amount of storm activity decreased overnight and is currently more limited in extent (95A). While curved bands are located south of 16N between 65W and 75W, convective activity is only widely scattered in the vicinity of the low-level vorticity maximum, as indicated by Curacao radar (95B). An afternoon DC-8 mission is scheduled for this afternoon and should yield a better understanding of the surface wind field associated with 95L.

After racing westward yesterday, 95L has begun to slow to a 275° heading at between 10-15 knots as it moves past the fastest low-level steering flow south of a strengthening ridge in the western Atlantic (95C). Shear is abating as it moves west, with a large area of very favorable upper-level outflow waiting for it west of 73W (95A). The area of dry air that hampered 95L earlier this week is now far north and east of the system and is no longer interacting with the wave., and it is also moving into an area of increasing TCHP (95D). In short, 95L is likely to undergo genesis, and may rapidly develop thereafter on Thursday, Friday, and Saturday in the western Caribbean.

As they have since Sunday, the models continue to suggest that 95L will develop before crossing 80W. The global model track consensus has continued to shift slightly southward in the 00Z runs, with the majority of guidance now targeting the Honduras/Nicaragua border early on Saturday (95E). In the medium-term, the forecast track of 95L is complex, as a trough is set to dig into the Ohio River Valley and Eastern Seaboard this weekend, which will impart a northerly component to its track. While many of the global models stall the TC over Central America or the Gulf of Honduras late in the weekend, the operational solutions are on the southern and western extremes of the ensemble envelopes (95F), hinting that the system may well have more separation from land than forecast. While forecast scenarios are highly divergent at long-range, the extreme TCHP values (95D) and very favorable environmental parameters from which 95L could benefit early next week make this feature of heightened interest for Florida and the U.S. Gulf Coast.

#### **Eastern Pacific:**

Tropical Depression Georgette is centered at 26.8° N and 111.0° W with winds of 30 kt and a pressure of 1000 mb as of 1500 UTC. The NHC forecasts Georgette to track north-northwestward, turning northward as it makes its second landfall on the eastern coast of the Gulf of California as a tropical depression, with dissipation likely occurring just south of the US-Mexico border around 1200 UTC tomorrow (**EP1**). Moisture from Georgette will spread into the southwestern US, and precipitation along the US-Texas border should occur. However, it should peak around 1200UTC tomorrow and move eastward as a mid-latitude trough propagates across the region (**EP2**). Elsewhere in the eastern Pacific, global models still show 850 mb vorticity maxima tracking eastward in the basin, but only the 0600 UTC GFS run shows these features combining, and even that model has lessened the degree to which the resulting system will develop (**EP3**). Tropical cyclone development is unlikely anywhere in the eastern Pacific for the rest of GRIP.

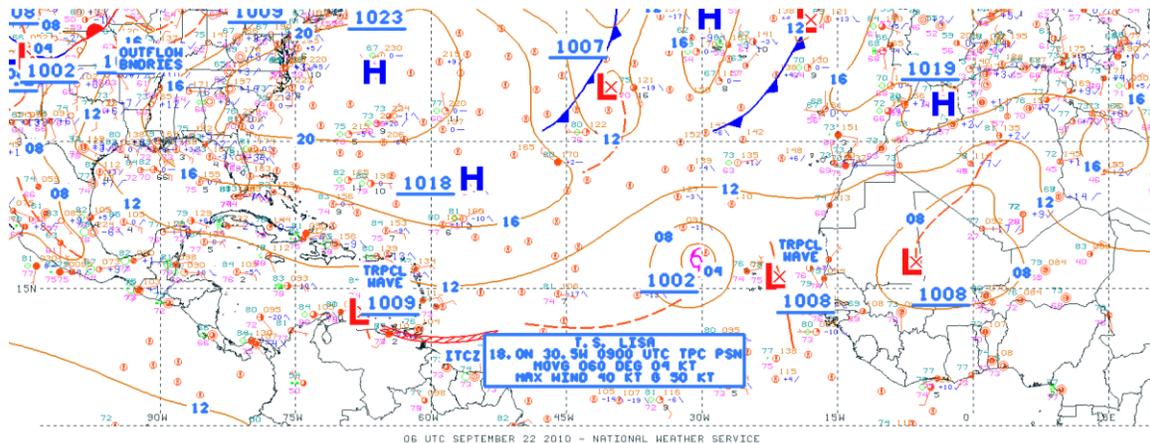
### Eastern Atlantic:

The remnant circulation of ex-Julia is still spinning fish near 33N/38W, while Lisa/PGI45L continues convective bursts near its center at 17N/30.5W (**S1, S2, S3**). Other waves along the ITCZ (**S7, C7**), such as ex-PGI47L, are currently not being tracked as potential pouches of interest. Julia is expected to continue spinning, roughly around the periphery of the subtropical high, until a slow and agonizing dissipation in the next 5 days. Drier air around the northern and western sections of Lisa (**S4, S6, C10**), as well as high shear (**L1, C8**) to the north and south, are the major factors for short term intensity change. A model intensity consensus (**L2**) is split between slight strengthening and slight weakening through 3-4 days, while tracks (**L3**) show vigorous near-stationary transit followed by general northwestern crawling.

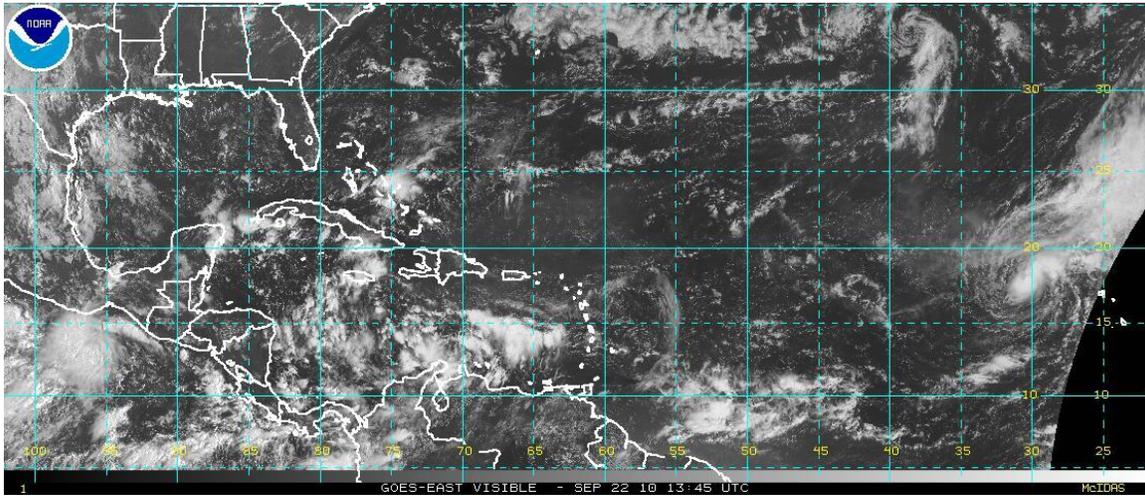
Forecasters: Zelinsky, Wood, Truchulet, Cossuth

## Images used in discussion:

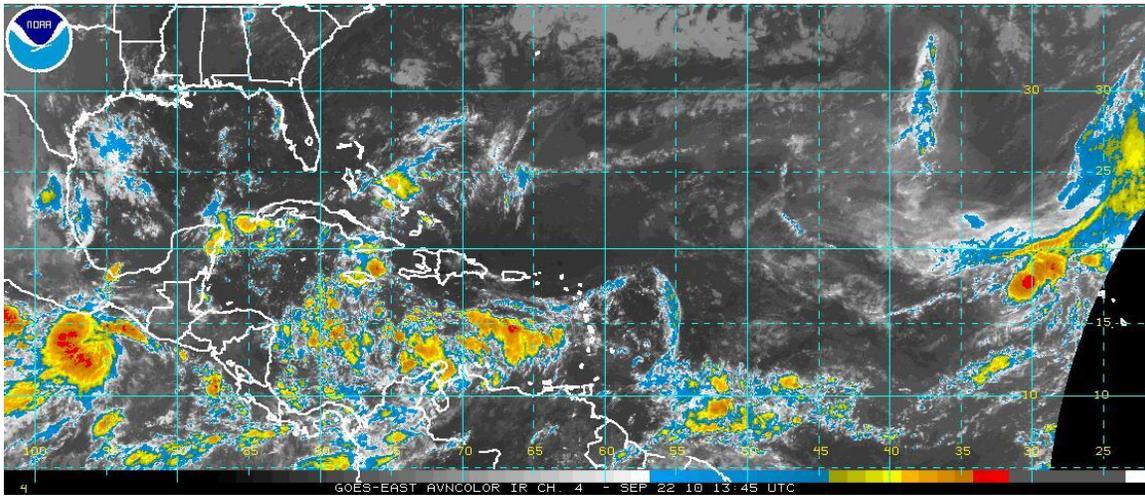
S1



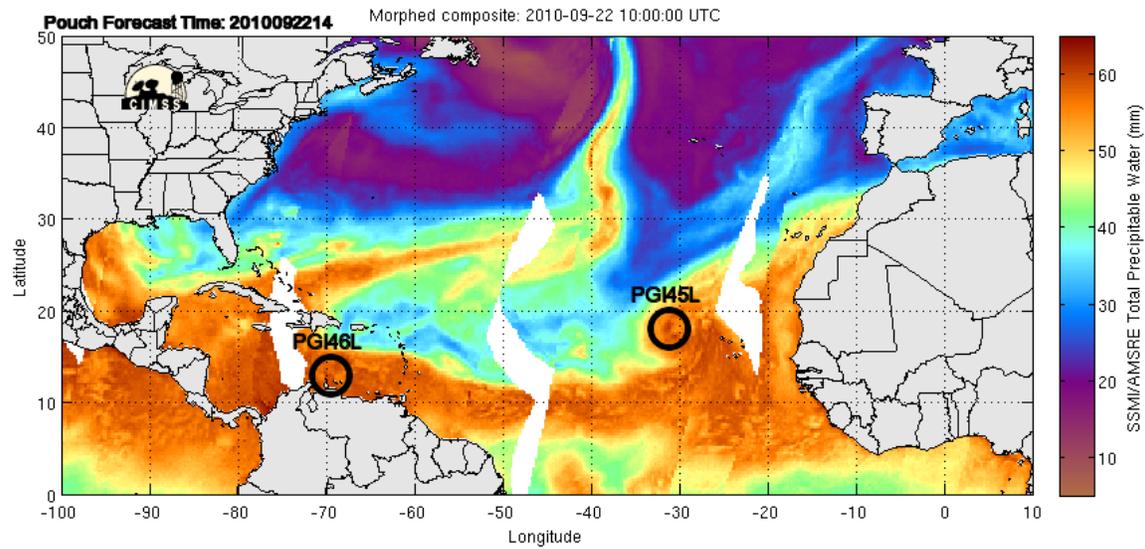
### S2 GOES Visible



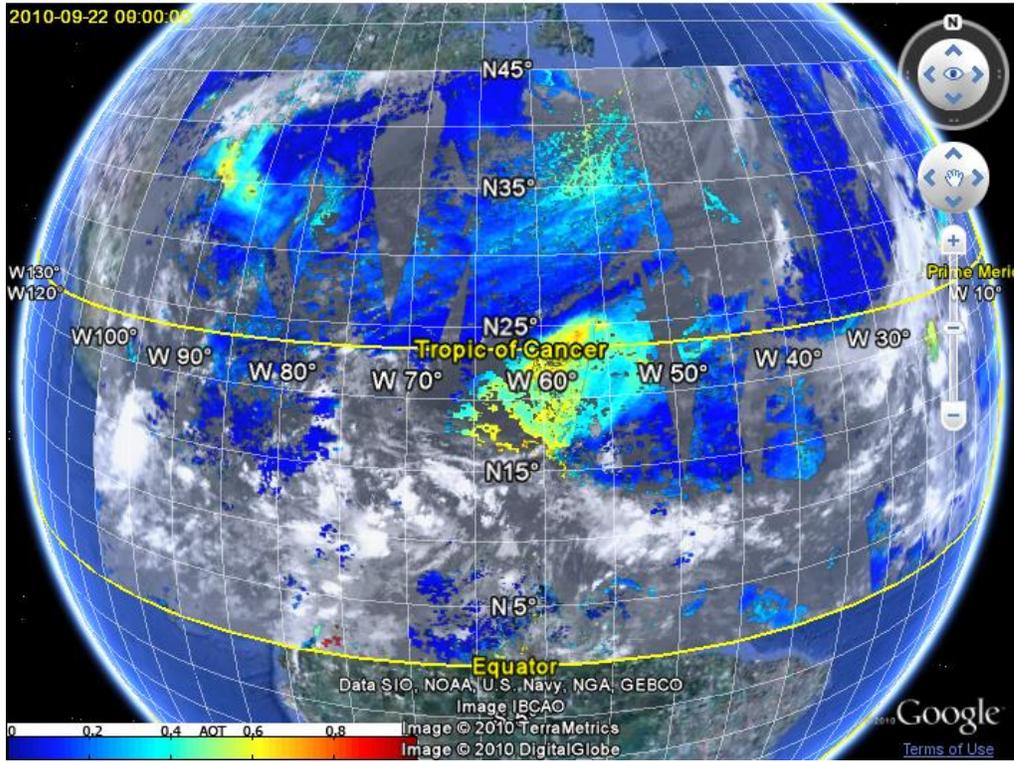
### S3- GOES IR



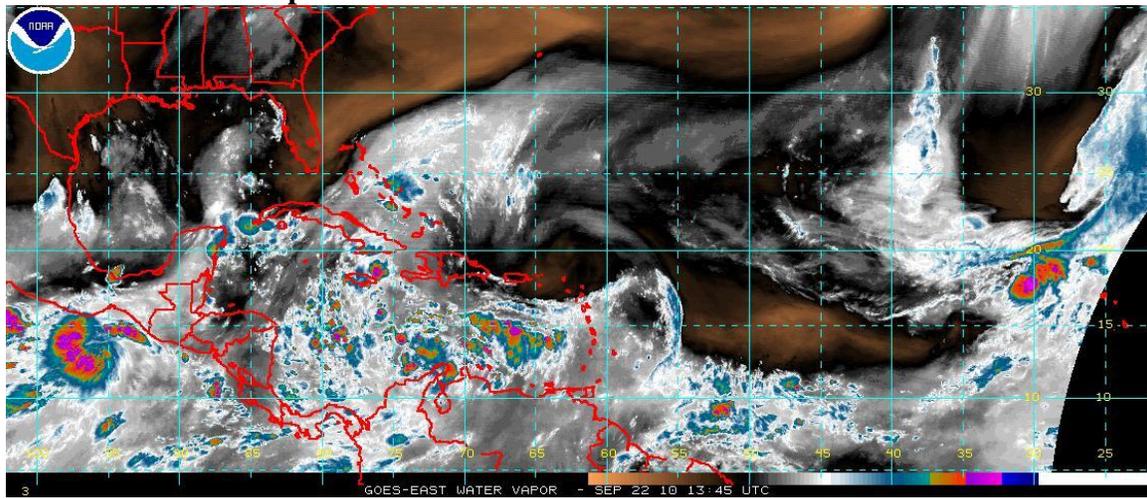
### S4- CIMSS TPW with Pouch Positions



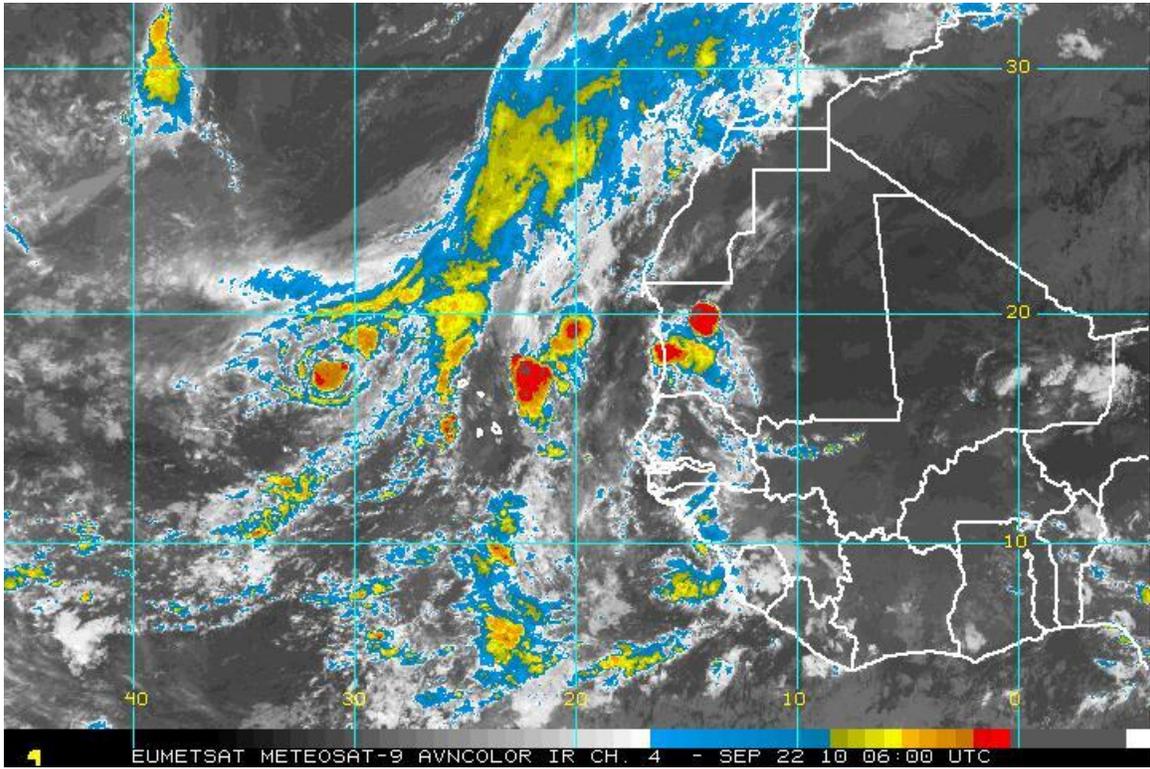
### S5 TERRA and AQUA AOT:



### S6- GOES Water Vapor

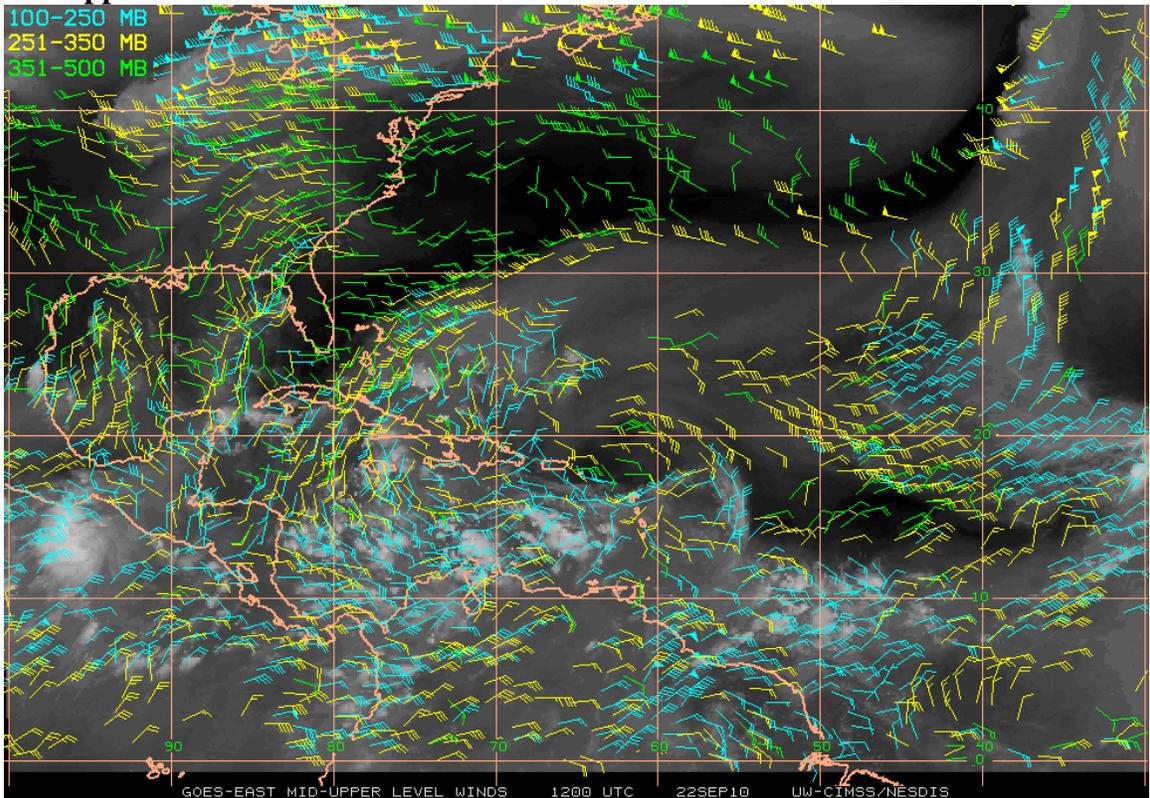


### S7 METEOSAT IR

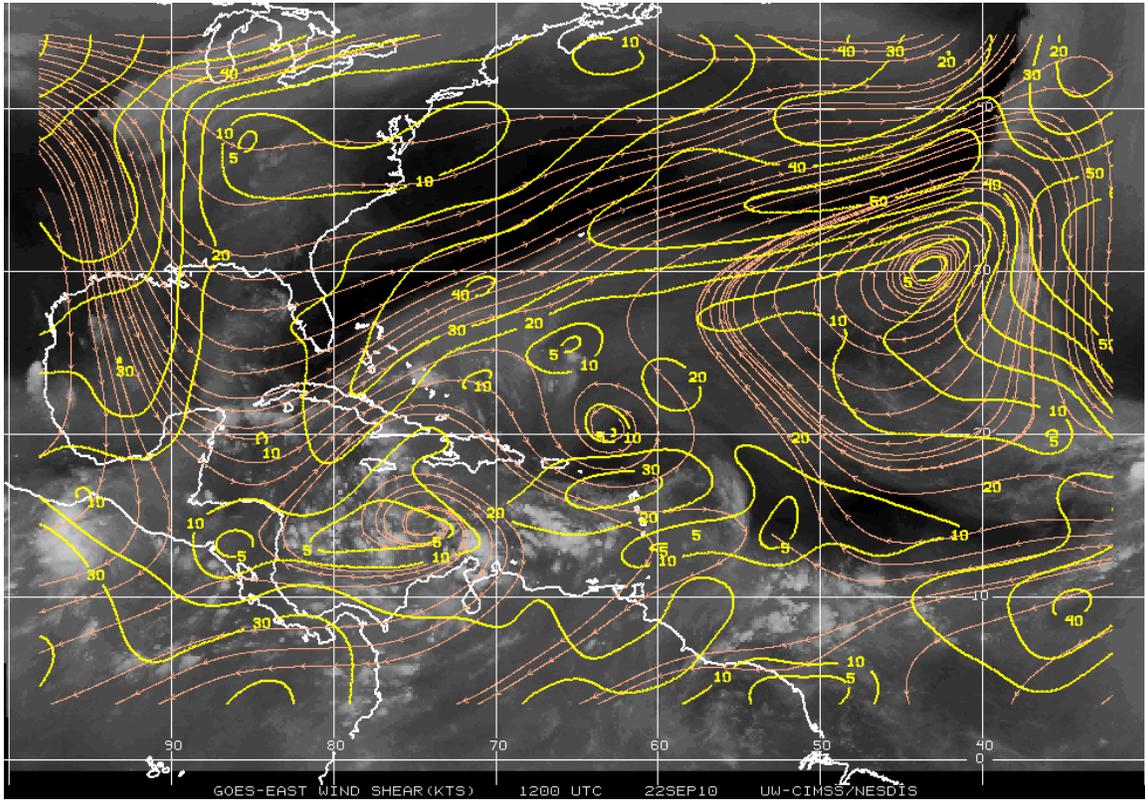


### CIMSS Analyses:

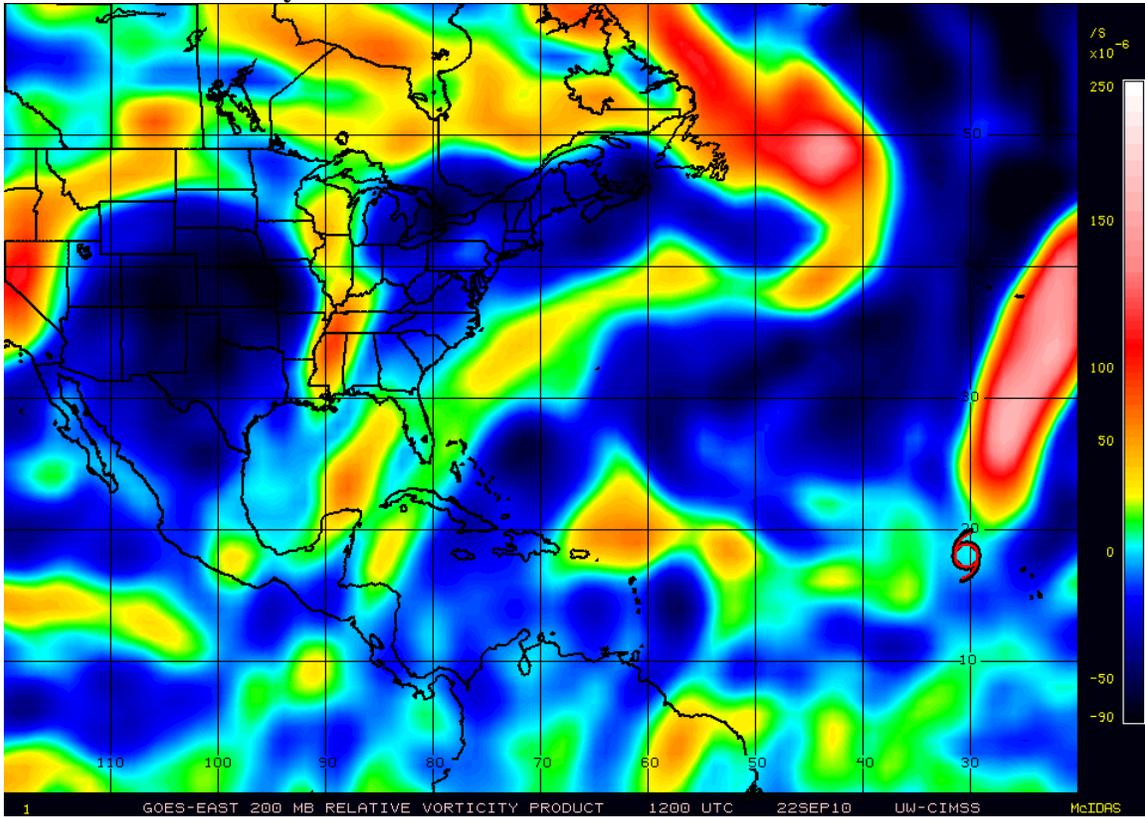
#### C1- Upper Level Winds



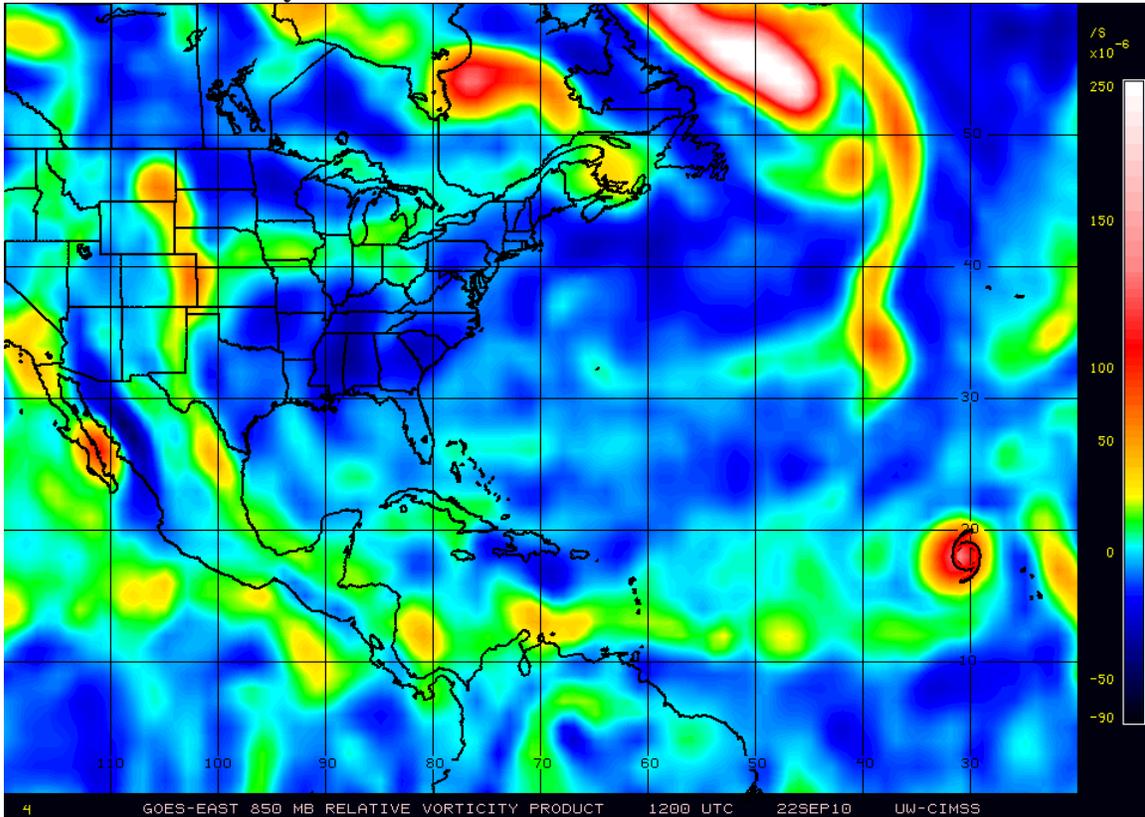
### C2- Wind Shear



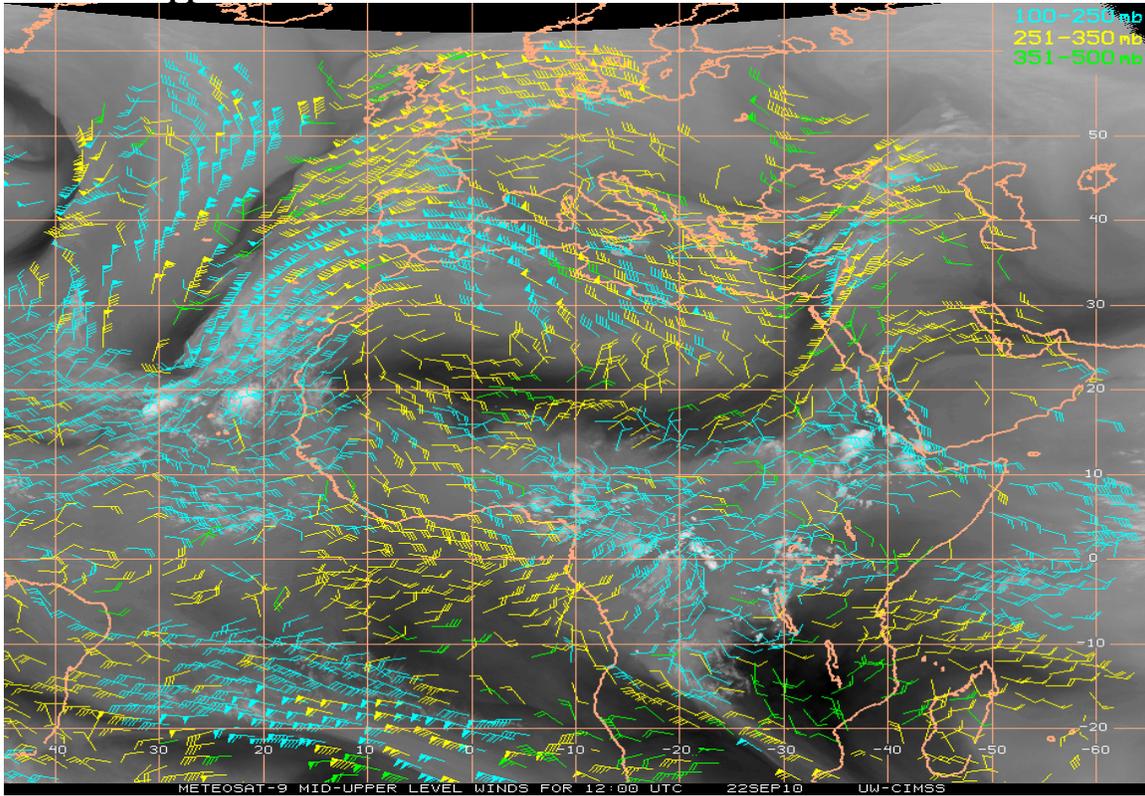
### C3- 200 hPa Vorticity



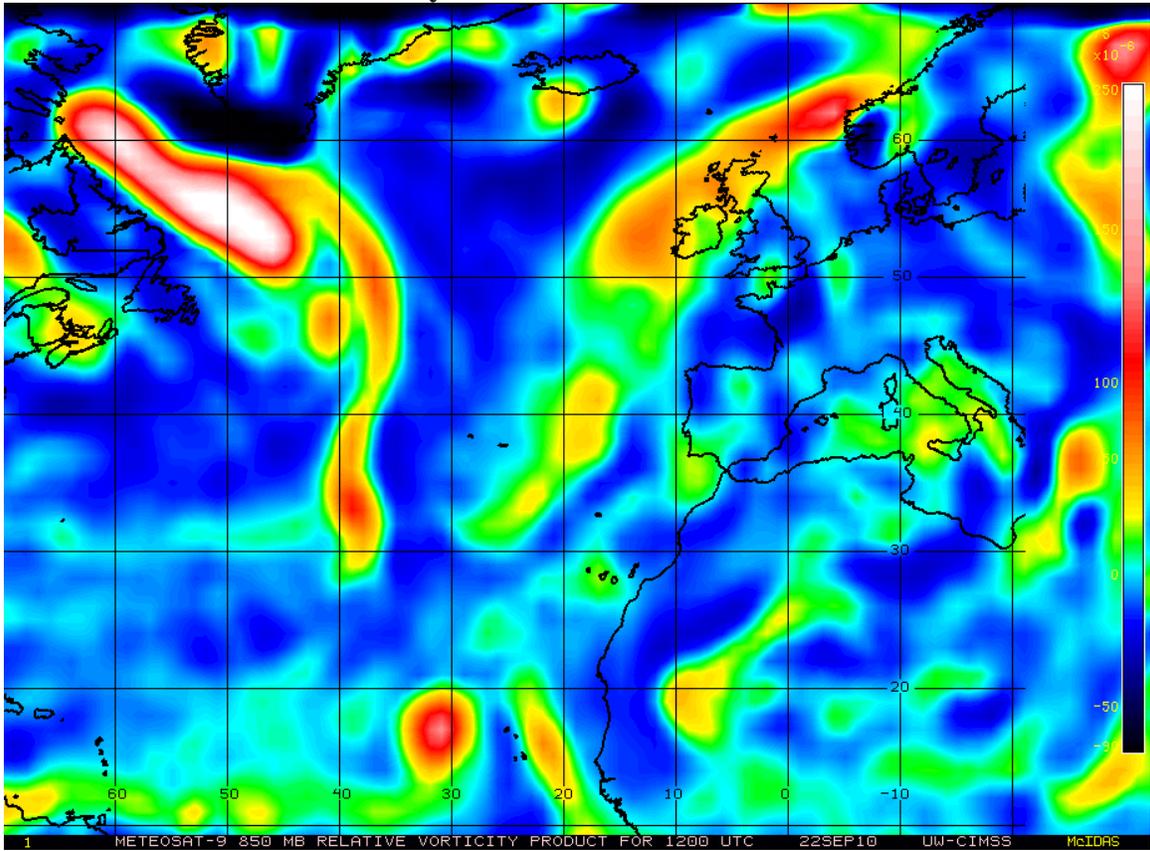
### C4- 850 hPa Vorticity



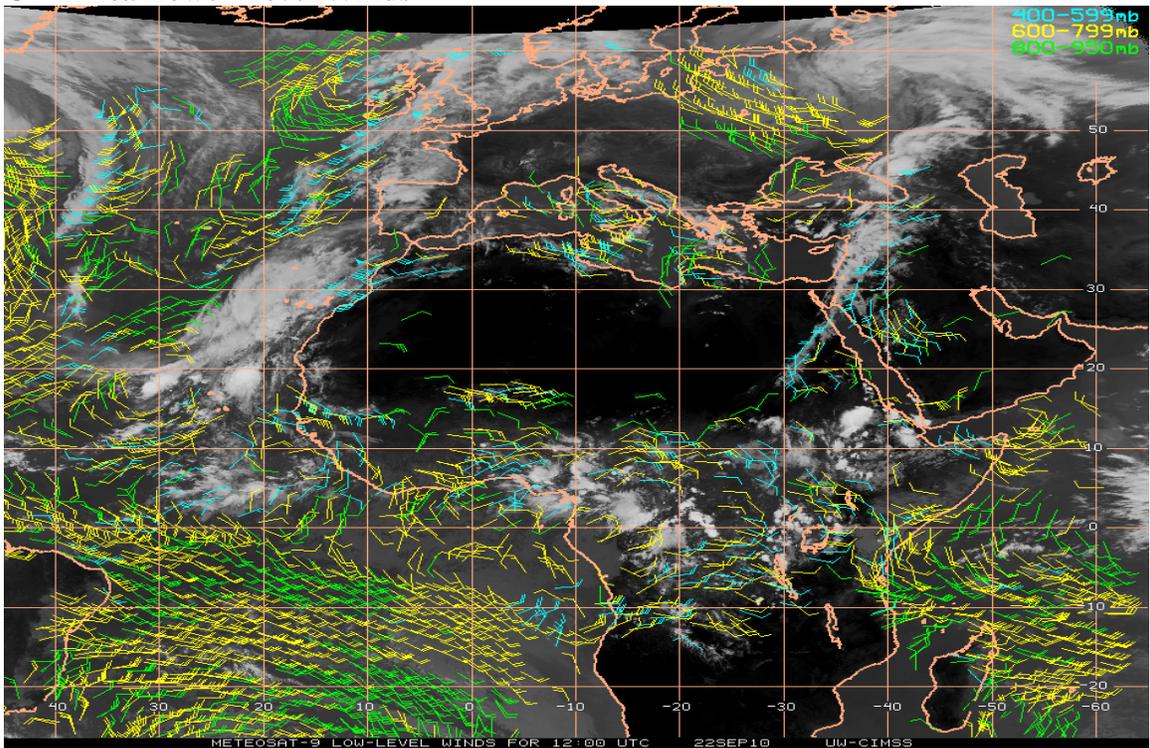
### C5 Africa Upper Level Winds:



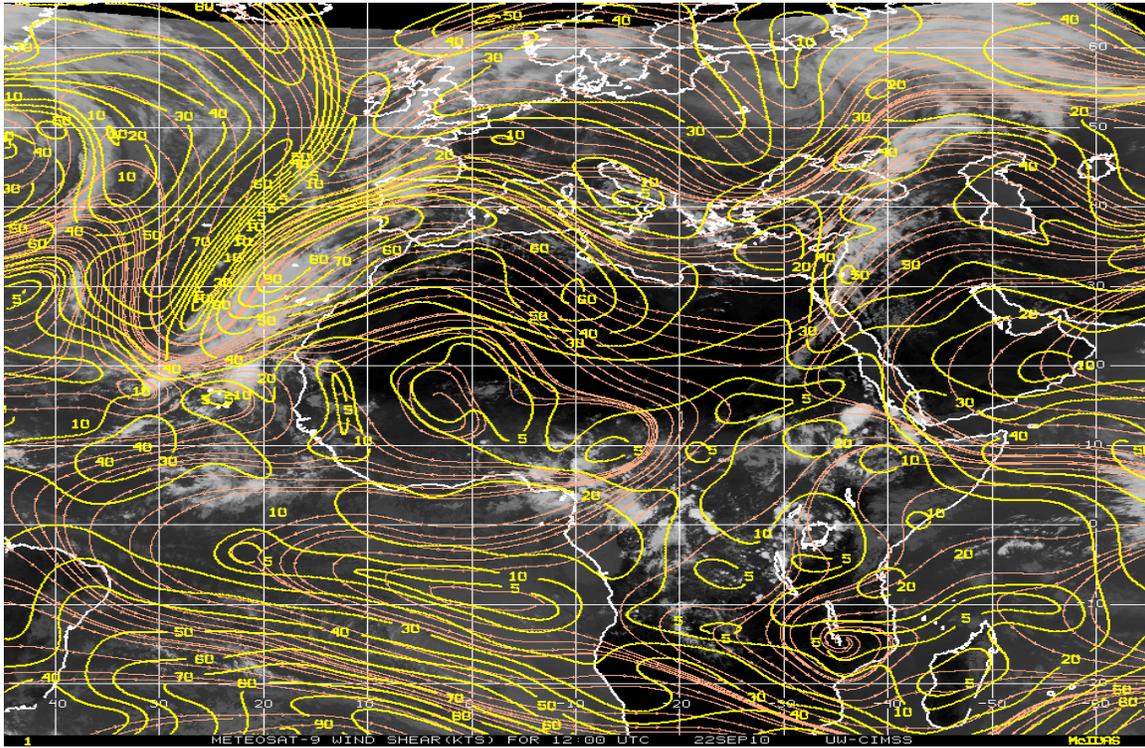
### C6 Africa Lower Level Vorticity



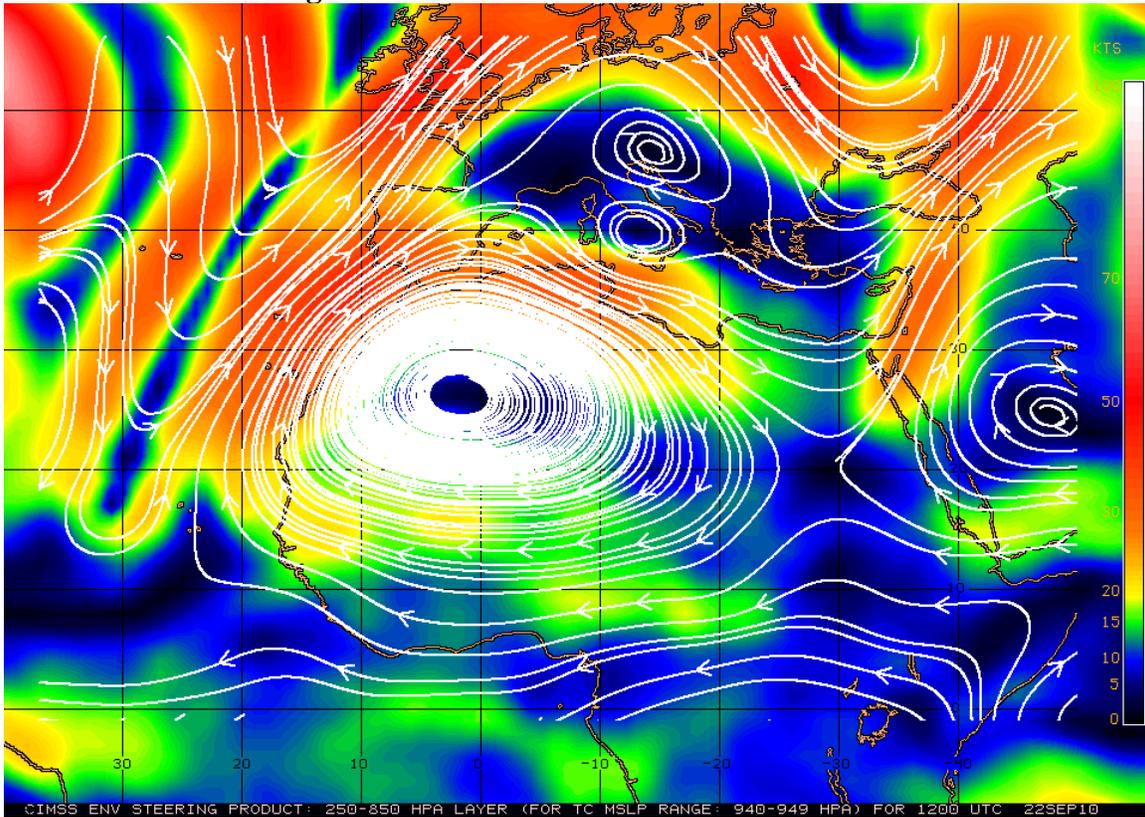
### C7 Africa Lower Level Winds



### C8 Africa Wind Shear

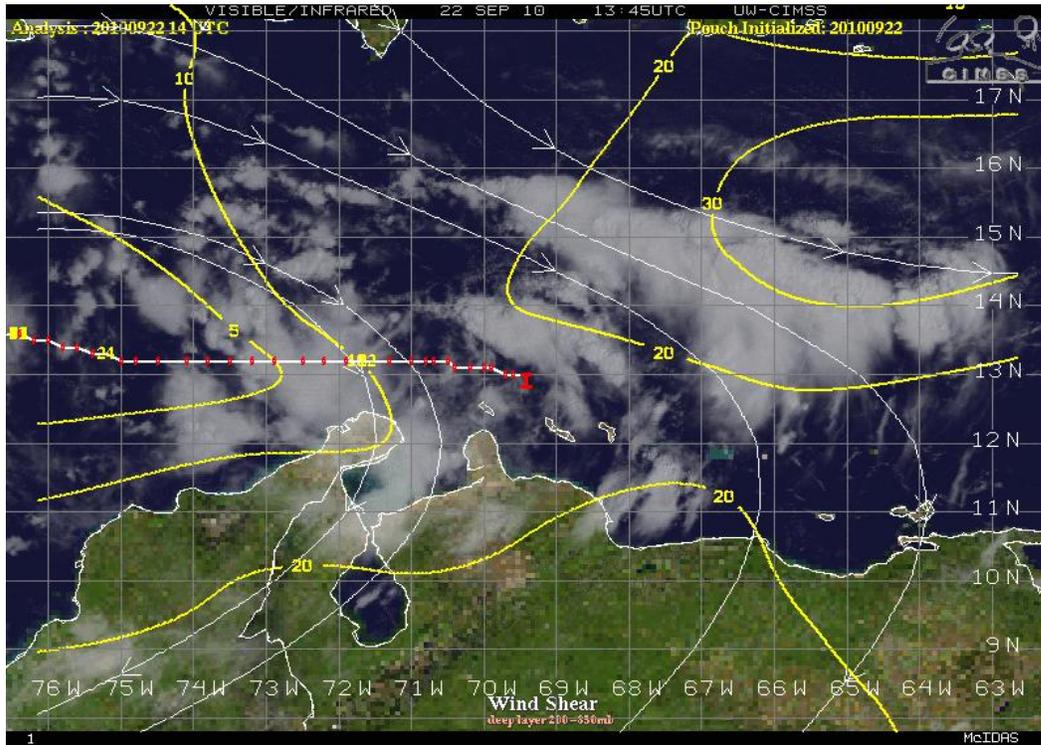


### C9 850-200mb Steering Flow over Africa

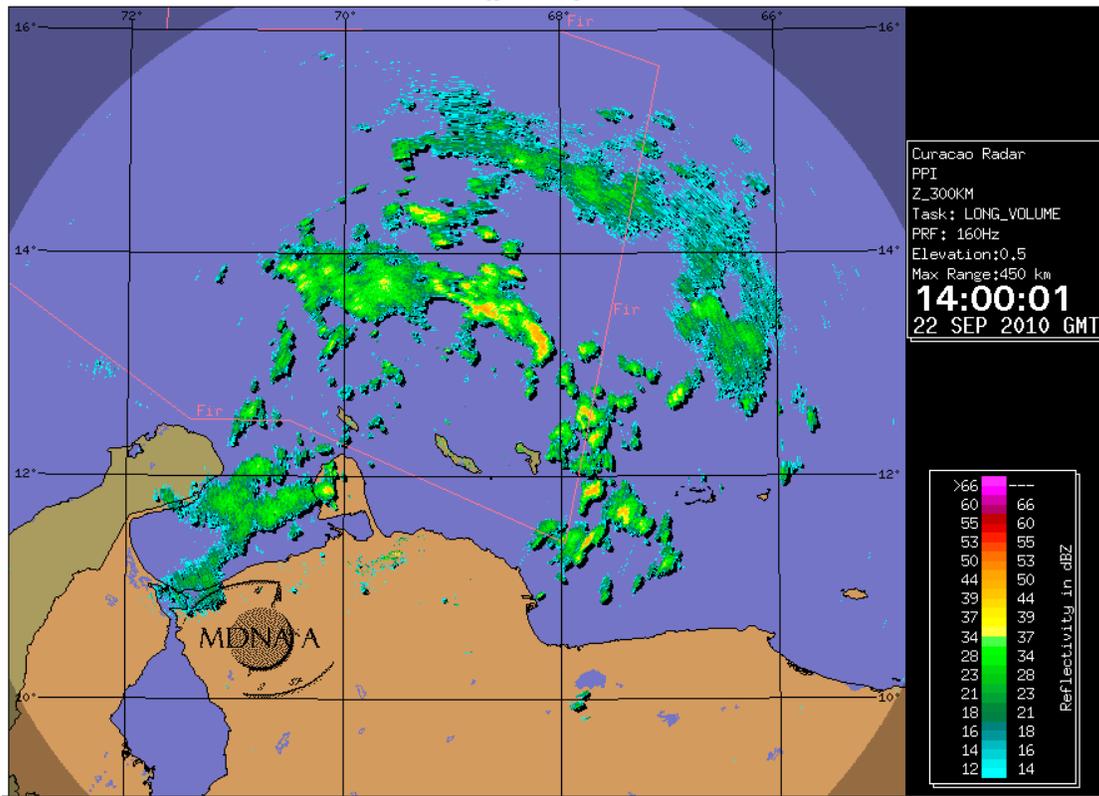


**PGI-46L...AL95:**

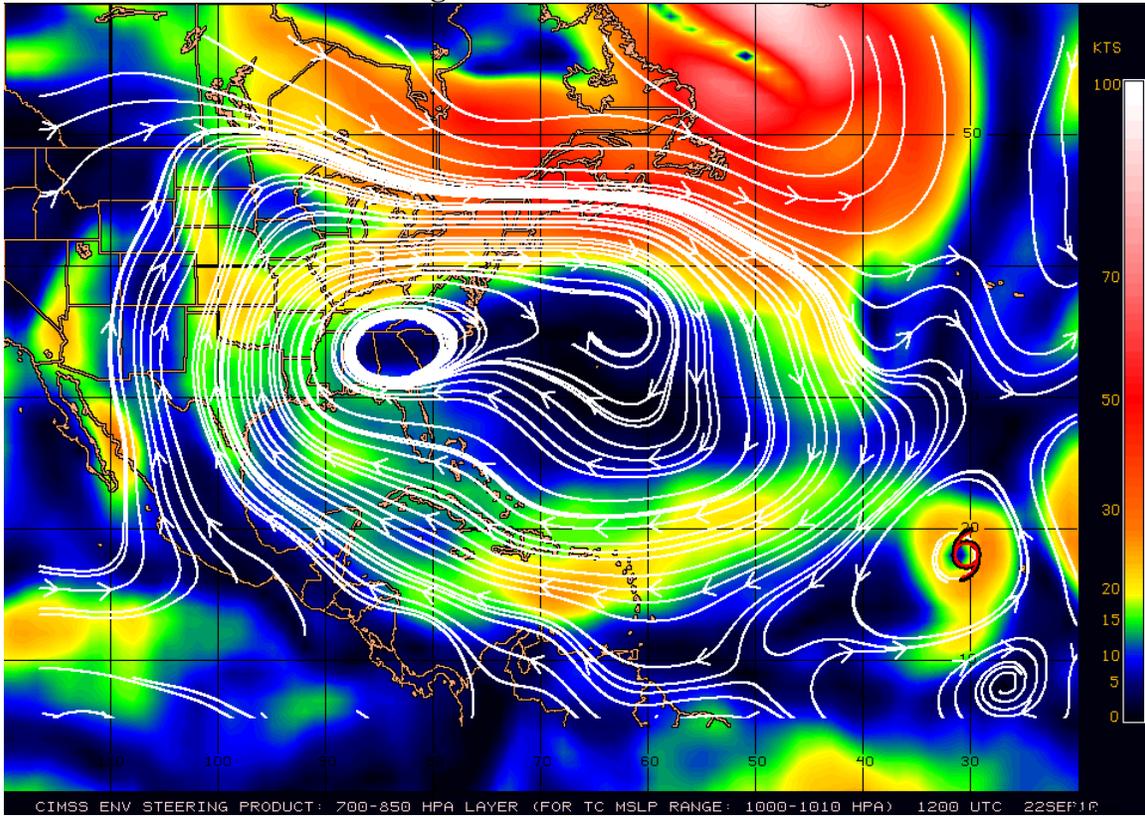
**95A CIMMMS 850-200mb Wind Shear and Visible Satellite**



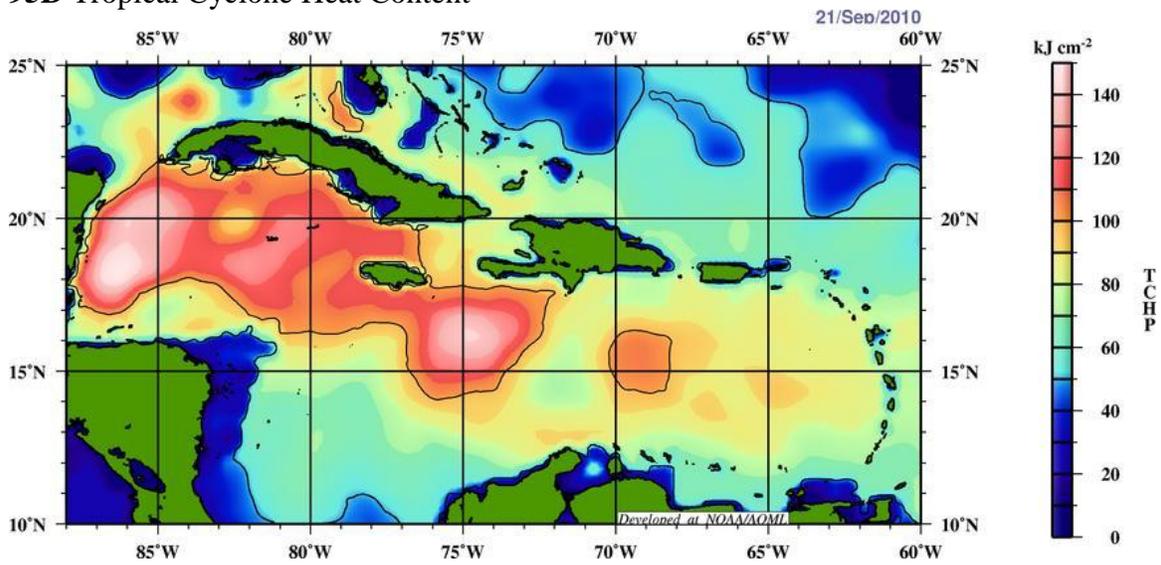
# 95B Base Reflectivity from Curacao



### 95C CIMSS Low Level Steering Currents



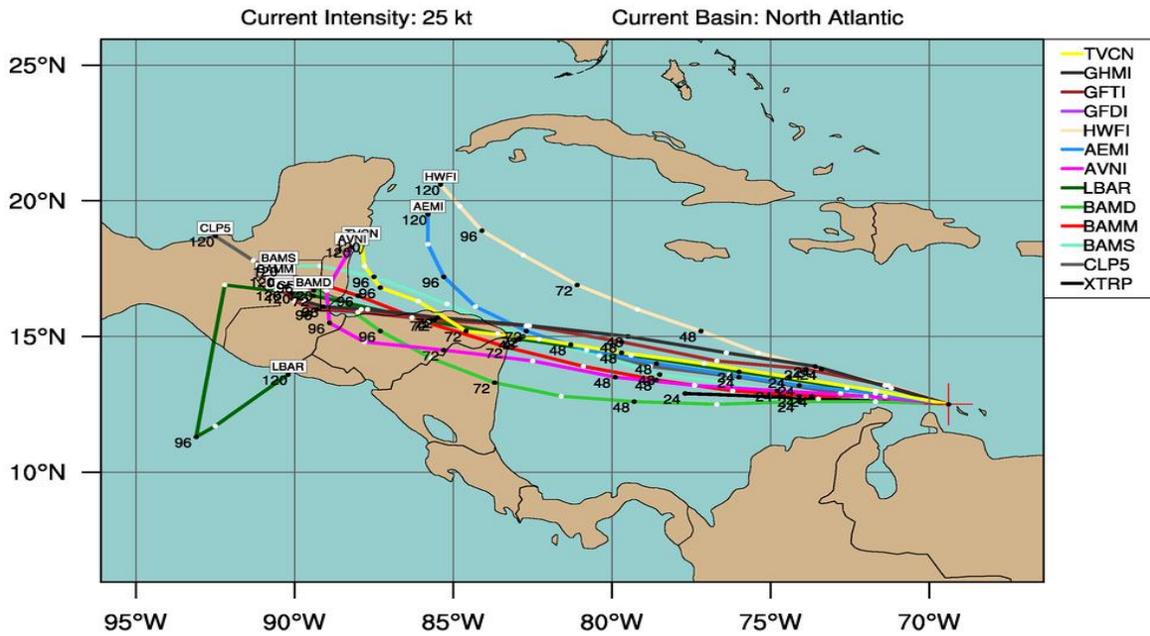
### 95D Tropical Cyclone Heat Content



95E

## DISTURBANCE INVEST (AL95)

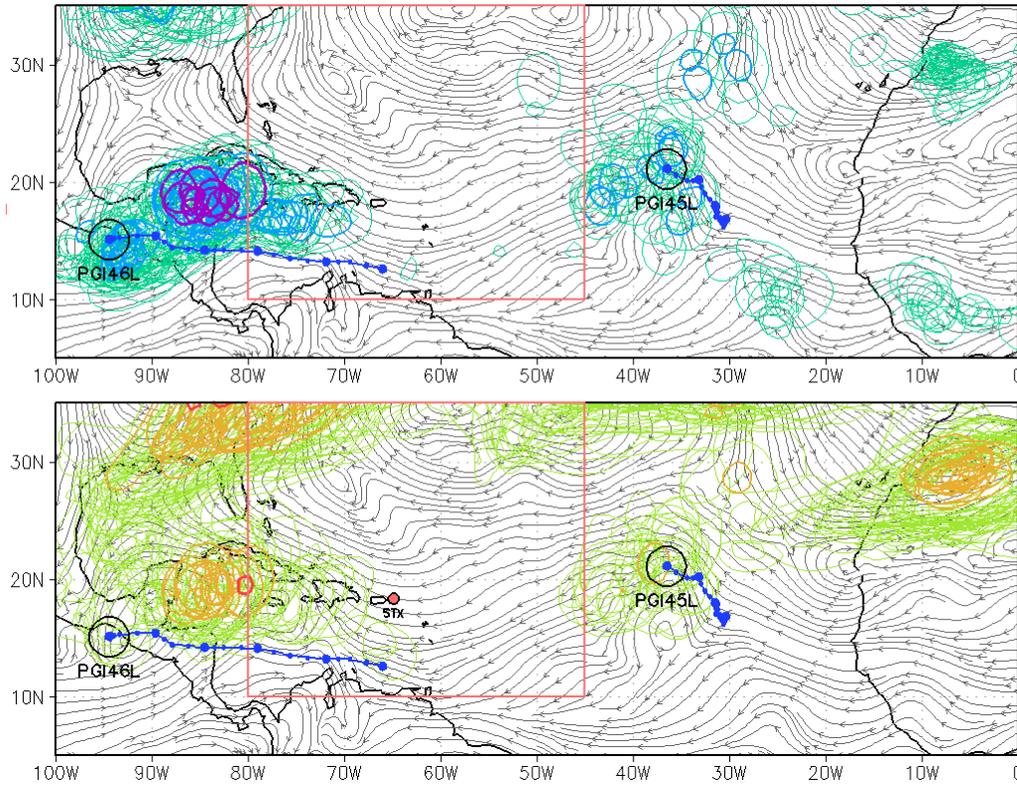
Early-cycle track guidance valid 1200 UTC, 22 September 2010



This plot does not display official storm information. Use for information purposes only.  
DO NOT USE FOR LIFE AND DEATH DECISIONS!

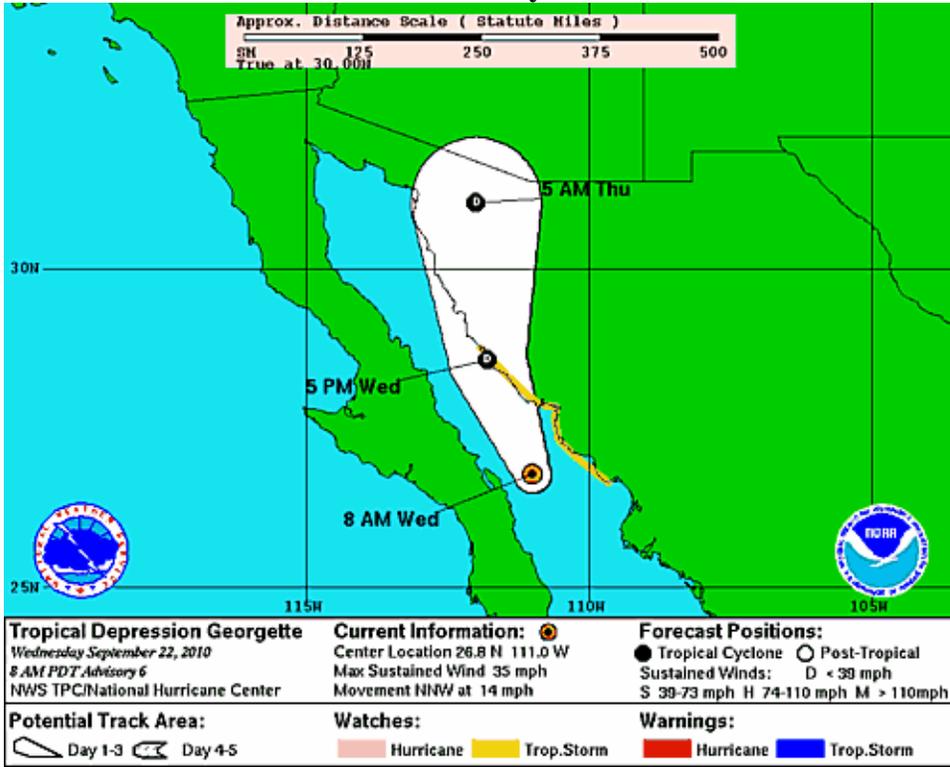
## 95F 00Z ECMWF Ensemble Members

Gray: ECMWF 120-hour CTRL streamlines of 700–850 hPa ave wind. Init. 2010092200, Valid 2010092700.  
Color: Contours of 700–850 hPa CIRC  $\times 2.5e-5 \text{ m}^2 \text{ s}^{-1}$  and 200–850 hPa THICK ANOM  $\times 20 \text{ m}$ . 50 members.

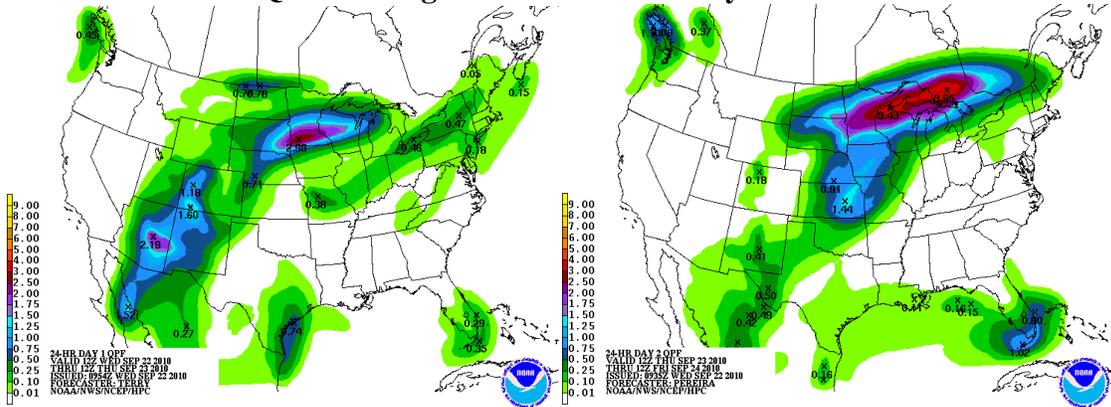


### Eastern Pacific:

# EP1-1500UTC NHC track and intensity forecast

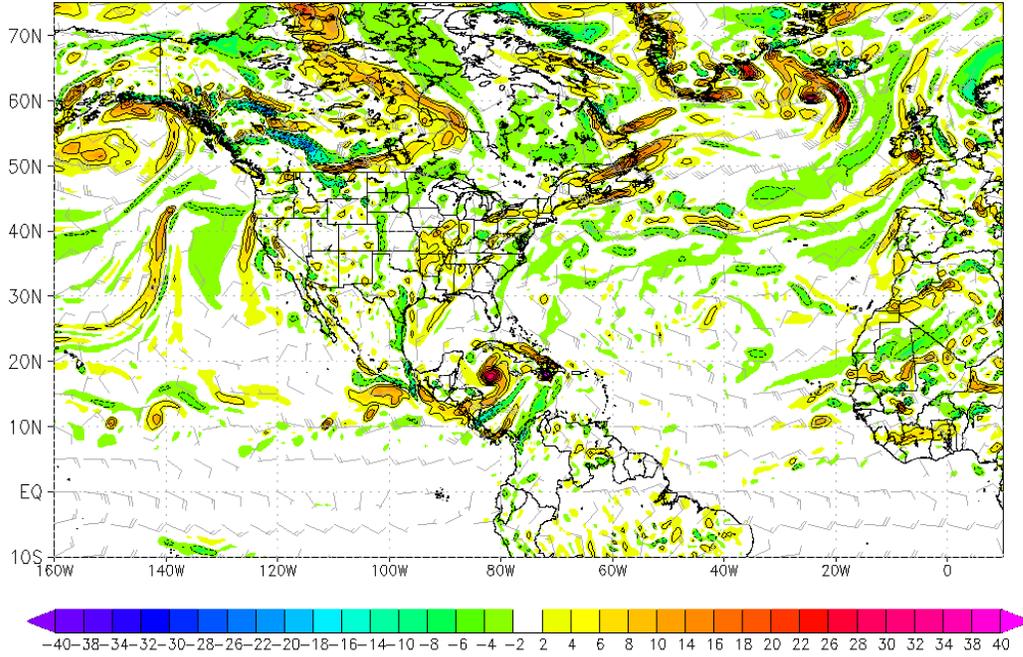


# EP2-HPC 24 hour QPF starting 1200UTC Wednesday



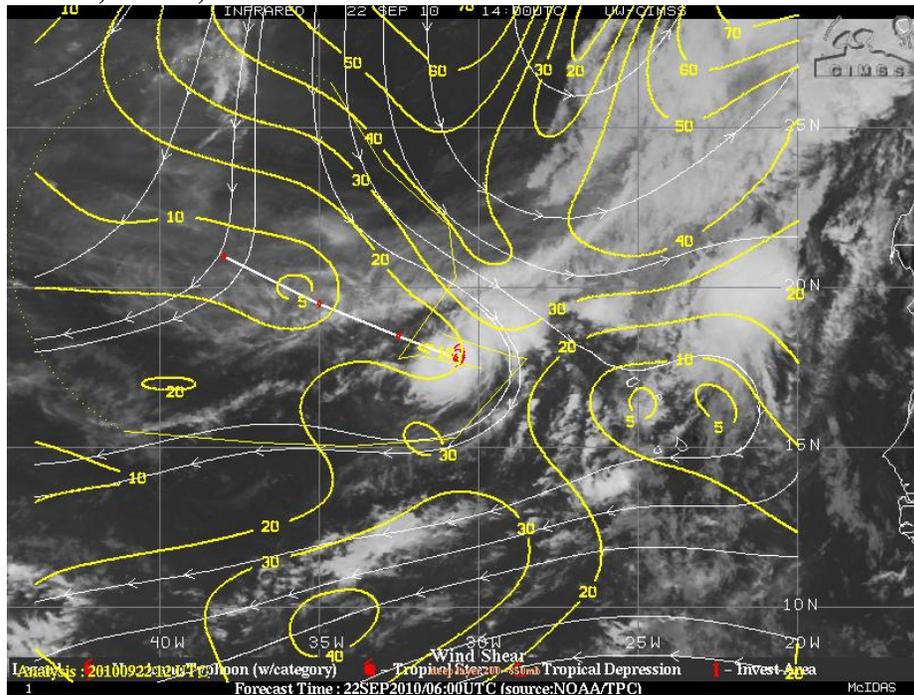
### EP3- 0600UTC GFS 850mb vorticity at hour 168

06Z22SEP2010\_gfs  
850mb vorticity ( $10^{-5} s^{-1}$ ) T=168 h  
Shading every 2 units; Contouring every 4 units



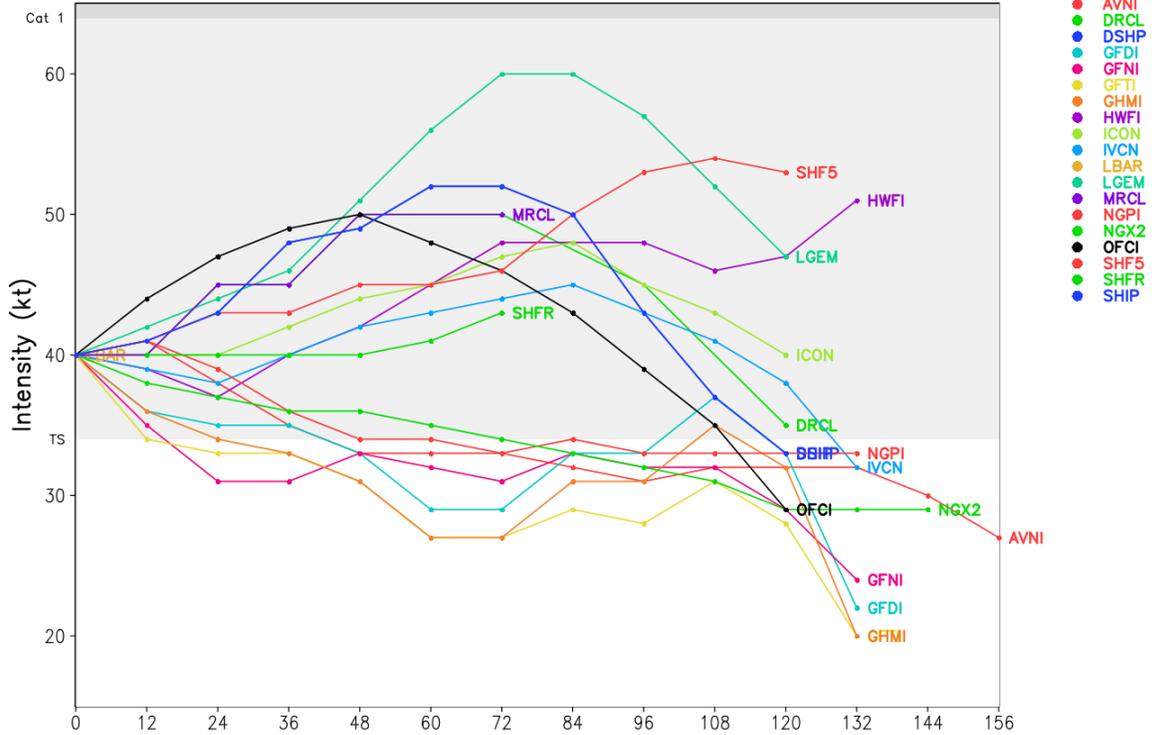
### East Atlantic / Lisa:

#### L1- IR, Track, and CIMSS 850-200mb Wind Shear



L2

### Atlantic TROPICAL STORM LISA Model Intensities Valid Time: 1200 UTC 22 September 2010

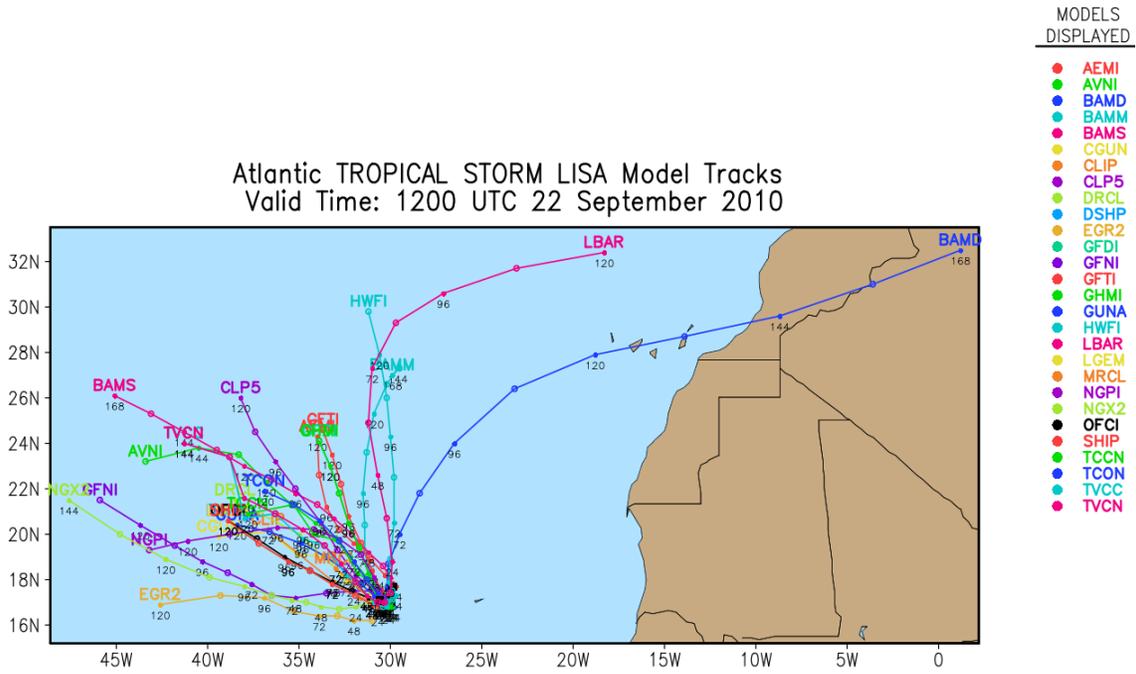


Tropical Cyclone Model Plots  
<http://mop.met.fsu.edu/~acevans/models/>  
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Forecast Hour

DISCLAIMER: Do not use this image in place of official sources!  
The official NHC forecast is always available at <http://www.nhc.noaa.gov>.  
Forecast points above are shown in 12 hr increments.

L3



Tropical Cyclone Model Plots  
<http://map.met.fsu.edu/~acevans/models/>  
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Forecast points above are shown in 12 hr increments. Initial points denoted by black squares.